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inconspicuous. In addition, by determining the
existence probability by performing the statistical
processing for the evaluation reference value,
deterioration of the reliability of the existence
5   probability due to effects of noise of the obtained
images can be decreased.

In addition, according to this embodiment,
even by an apparatus having low processing
performance such a generally used personal computer,
10   each two-dimensional image can be generated at high
speed.
[Fifth embodiment]

Next, the fifth embodiment of the present
15   invention is described. The fifth embodiment mainly
corresponds to claims 44-53. In the fifth
embodiment, the three-dimensional shape of the
object is obtained from plural images obtained by
taking the object under different taking conditions.
20   Then, the three-dimensional image of the object is
displayed on a display, like a DFD, including plural
display planes based on the three-dimensional shape
of the object. In the fifth embodiment, processing
of the parameter fitting described in the fourth
25   embodiment is not performed. In figures for
explaining the fifth embodiment, the same signs are
assigned to components having the same function.

When obtaining the three-dimensional shape
of the object, projection planes of the multi-
30   layered structure are set in a virtual three-
dimensional space, and for points (projection
points), on plural projection planes, that overlap
when viewed from the observer's viewpoint, color
information or brightness information of each
35   projection point, and probability (existence
probability) that the surface of the object exists
on the projection point are determined. Then, when